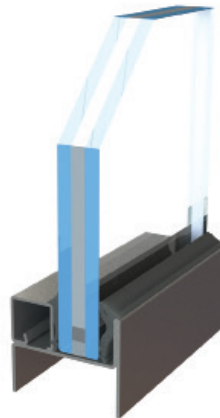


# CONTRAFLAM<sup>®</sup> 45

Fire-Rated Clear Laminated Safety Glass

## CLASSIFICATION

## PRODUCT FEATURES



## TECHNICAL SPECIFICATIONS

Fire Rating	45 Minutes
US Testing/Compliant	UL 9, 10B, UL 10C, NFPA 80, NFPA 252, NFPA 257
Canadian UL Listing	CAN/ULC-S104, S106
Building Code Marking	D-H-NT-45, OH-45
Impact Safety Rating	CPSC 16CFR 1201-CAT II; CAN/CGSB-12.1-M; ANSI Z97.1
Nominal Thickness (in.; mm)	3/4" (18 mm)
Thickness Tolerance (in.; mm)	+1/16" to -1/16" (+1.5 mm to -1.5 mm)
U value (BTU/hr*sqft/°F)	0.79
STC Rating	39
Visible Light Transmission	≈ 84%
Groove (in.; mm)	Depth: 5/8" (16 mm) Width: 7/8" (22 mm)
Weight (lbs./ft. <sup>2</sup> ; kg/m <sup>2</sup> )	8.0 (39.0)

MAXIMUM DIMENSIONS	Window, Transom, Sidelight	Door Non-Temp Rise	Door Temp Rise
Maximum Exposed Height (in; m)*	95-1/2 (2.43)	95-1/2 (2.43)	N/A
Maximum Exposed Width (in; m)*	95-1/2 (2.43)	35-13/16 (0.91)	N/A
Maximum Exposed Area (in <sup>2</sup> ; m <sup>2</sup> )*	3,419 (2.21)	3,419 (2.21)	N/A

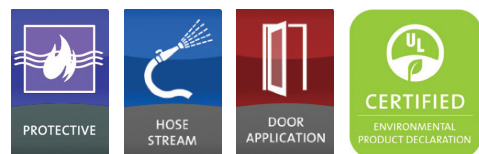
\*Height multiplied by width cannot exceed maximum exposed area.

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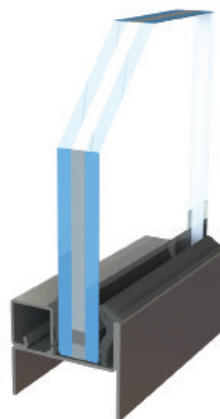
# CONTRAFLAM® 45 IGU

Fire-Rated Clear Laminated Safety Glass - Exterior Application

## CLASSIFICATION



## PRODUCT FEATURES



## TECHNICAL SPECIFICATIONS

Fire Rating	45 Minutes
US Testing/Compliant	UL 9, 10B, UL 10C, NFPA 80, 252, 257
Canadian UL Listing	CAN/ULC-S104., S106
Building Code Marking	D-H-NT-45, OH-45
Impact Safety Rating	CPSC 16CFR 1201-CAT II; CAN/CGSB-12.1-M
Nominal Thickness (in.; mm)	1-1/4" (32 mm)
Thickness Tolerance (in.; mm)	+1/8" to -1/16" (+3 mm to -1.5 mm)
U value (BTU/hr*sqft/°F)	0.44
STC Rating	42
Visible Light Transmission	≈ 80%
Groove (in.; mm)	Depth: 5/8" (16 mm) Width: 1-1/2" (38 mm)
Weight (lbs./ft. <sup>2</sup> ; kg/m <sup>2</sup> )	11.0 (54.0)

MAXIMUM DIMENSIONS	Window, Transom, Sidelight	Door Non-Temp Rise	Door Temp Rise
Maximum Exposed Height (in; m)*	95-1/2 (2.43)	95-1/2 (2.43)	N/A
Maximum Exposed Width (in; m)*	95-1/2 (2.43)	35-13/16 (0.91)	N/A
Maximum Exposed Area (in <sup>2</sup> ; m <sup>2</sup> )*	3,419 (2.21)	3,419 (2.21)	N/A

\*Height multiplied by width cannot exceed maximum exposed area.

Low iron glass available upon request.

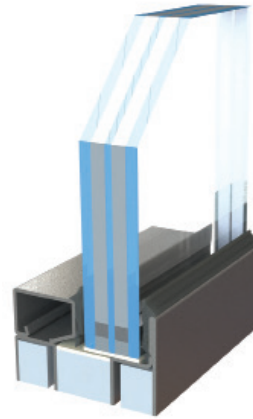
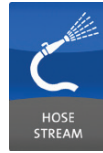
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# CONTRAFLAM<sup>®</sup> 60

Fire-Rated Clear Tempered Safety Glass

## CLASSIFICATION

## PRODUCT FEATURES



## TECHNICAL SPECIFICATIONS

Fire Rating	60 Minutes
US Testing/Compliant	UL 9, 10B, UL 10C, NFPA 80, NFPA 251, NFPA 252, NFPA 257, ASTM E119, UL 263
Canadian UL Listing	CAN/ULC-S101, S104, S106
Building Code Marking	D-H-T-60, OH-60, W-60
Impact Safety Rating	CPSC 16CFR 1201-CAT II; CAN/CGSB-12.1-M; ANSI Z97.1
Nominal Thickness (in.; mm)	1" (25 mm)
Thickness Tolerance (in.; mm)	+1/8" to -1/16" (+3 mm to -1.5 mm)
U value (BTU/hr*sqft/°F)	0.34
STC Rating	40
Visible Light Transmission	≈ 80%
Groove (in.; mm)	Depth: 7/8" (22 mm) Width: 1-3/4" (45 mm)
Weight (lbs./ft. <sup>2</sup> ; kg/m <sup>2</sup> )	10.3 (58.0)

MAXIMUM DIMENSIONS	Window, Transom, Sidelight	Door Non-Temp Rise	Door Temp Rise
Maximum Exposed Height (in; m)*	94-13/16 (2.41)	89-1/2 (2.27)	89-1/2 (2.27)
Maximum Exposed Width (in; m)*	94-13/16 (2.41)	30 (0.76)	30 (0.76)
Maximum Exposed Area (in <sup>2</sup> ; m <sup>2</sup> )*	4,449 (2.87)	2,685 (1.73)	2,685 (1.73)

\*Height multiplied by width cannot exceed maximum exposed area.

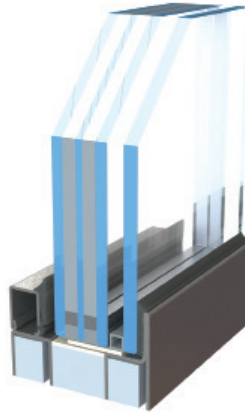
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# CONTRAFLAM® 60 IGU

Fire-Rated Clear Tempered Safety Glass - Exterior Application

## CLASSIFICATION

## PRODUCT FEATURES



## TECHNICAL SPECIFICATIONS

Fire Rating	60 Minutes
US Testing/Compliant	UL 9, 10B, UL 10C, 263; NFPA 80, NFPA 251, NFPA 252, NFPA 257, ASTM E119, UL 263
Canadian UL Listing	CAN/ULC-S101, S104, S106
Building Code Marking	D-H-T-60, OH-60, W-60
Impact Safety Rating	CPSC 16CFR 1201-CAT II; CAN/CGSB-12.1-M; ANSI Z97.1
Nominal Thickness (in.; mm)	1-9/16" (40 mm)
Thickness Tolerance (in.; mm)	+1/8" to -1/16" (+3 mm to -1.5 mm)
U value (BTU/hr*sqft/°F)	0.76
STC Rating	44
Visible Light Transmission	≈ 85%
Groove (in.; mm)	Depth: 7/8" (22 mm) Width: 1-1/4" (32 mm)
Weight (lbs./ft. <sup>2</sup> ; kg/m <sup>2</sup> )	10.3 (50.5)

MAXIMUM DIMENSIONS	Window, Transom, Sidelight	Door Non-Temp Rise	Door Temp Rise
Maximum Exposed Height (in; m)*	94-13/16 (2.41)	89-1/2 (2.27)	89-1/2 (2.27)
Maximum Exposed Width (in; m)*	94-13/16 (2.41)	30 (0.76)	30 (0.76)
Maximum Exposed Area (in <sup>2</sup> ; m <sup>2</sup> )*	4,449 (2.87)	2,685 (1.73)	2,685 (1.73)

\*Height multiplied by width cannot exceed maximum exposed area.

Low iron glass available upon request.

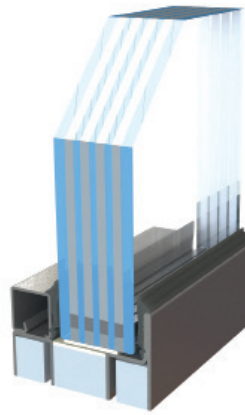
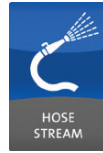
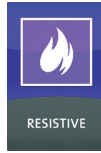
Rev. 11.11.15 The information published in this document is correct at the time of going to press. Such information may be subject to change and products may be modified.

# CONTRAFLAM®

Fire-Rated Clear Tempered Safety Glass

## CLASSIFICATION

## PRODUCT FEATURES



## TECHNICAL SPECIFICATIONS

Fire Rating	90 Minutes
US Testing/Compliant	UL 9, 10B, UL 10C, NFPA 80, NFPA 252, NFPA 257
Canadian UL Listing	CAN/ULC S104, S106
Building Code Marking	D-H-T-90, OH-90
Impact Safety Rating	CPSC 16CFR 1201-CAT II; CAN/CGSB-12.1-M; ANSI Z97.1
Nominal Thickness (in.; mm)	1-1/2" (37 mm)
Thickness Tolerance (in.; mm)	+1/8" to -1/16" (+3 mm to -1.5 mm)
U value (BTU/hr*sqft/°F)	0.69
STC Rating	45
Visible Light Transmission	≈ 82%
Groove (in.; mm)	Depth: 13/16" (21 mm) Width: 1-15/16" (49 mm)
Weight (lbs./ft. <sup>2</sup> ; kg/m <sup>2</sup> )	14.6 (71.5)

MAXIMUM DIMENSIONS	Window, Transom, Sidelight	Door Non-Temp Rise	Door Temp Rise
Maximum Exposed Height (in; m)*	88-9/16 (2.25)	88-9/16 (2.25)	88-9/16 (2.25)
Maximum Exposed Width (in; m)*	88-9/16 (2.25)	35-3/4 (0.91)	35-3/4 (0.91)
Maximum Exposed Area (in <sup>2</sup> ; m <sup>2</sup> )*	3,174 (2.05)	3,174 (2.05)	3,174 (2.05)

\*Height multiplied by width cannot exceed maximum exposed area.

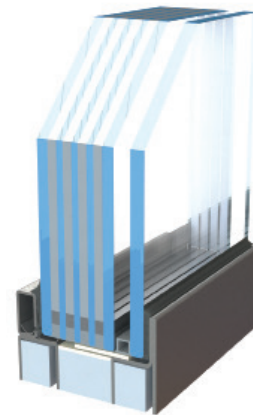
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# CONTRAFLAM<sup>®</sup> 90 IGU

Fire-Rated Clear Tempered Safety Glass - Exterior Application

## CLASSIFICATION

## PRODUCT FEATURES



## TECHNICAL SPECIFICATIONS

Fire Rating	90 Minutes
US Testing/Compliant	UL 9, 10B, UL 10C, NFPA 80, NFPA 252, NFPA 257
Canadian UL Listing	CAN/ULC-S101, S104, S106
Building Code Marking	D-H-T-90, OH-90
Impact Safety Rating	CPSC 16CFR 1201-CAT II; CAN/CGSB-12.1-M; ANSI Z97.1
Nominal Thickness (in.; mm)	1-15/16" (50 mm)
Thickness Tolerance (in.; mm)	+1/8" to -1/16" (+3 mm to -1.5 mm)
U value (BTU/hr*sqft/°F)	0.33
STC Rating	47
Visible Light Transmission	≈ 70%
Groove (in.; mm)	Depth: 13/16" (21 mm) Width: 2-3/16" (56 mm)
Weight (lbs./ft. <sup>2</sup> ; kg/m <sup>2</sup> )	17.7 (86.5)

MAXIMUM DIMENSIONS	Window, Transom, Sidelight	Door Non-Temp Rise	Door Temp Rise
Maximum Exposed Height (in; m)*	88-9/16 (2.25)	88-9/16 (2.25)	88-9/16 (2.25)
Maximum Exposed Width (in; m)*	88-9/16 (2.25)	35-3/4 (0.91)	35-3/4 (0.91)
Maximum Exposed Area (in <sup>2</sup> ; m <sup>2</sup> )*	3,174 (2.05)	3,174 (2.05)	3,174 (2.05)

\*Height multiplied by width cannot exceed maximum exposed area.

Low iron glass available upon request.

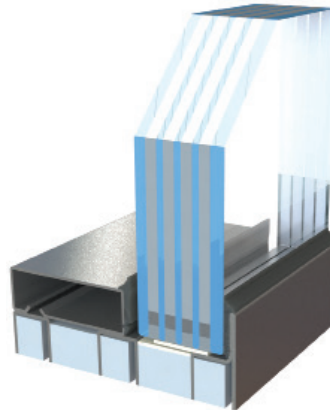
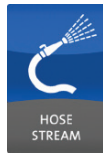
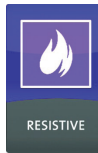
Rev. 11.11.15 The information published in this document is correct at the time of going to press. Such information may be subject to change and products may be modified.

# CONTRAFLAM® 120

Fire-Rated Clear Tempered Safety Glass

## CLASSIFICATION

## PRODUCT FEATURES



## TECHNICAL SPECIFICATIONS

Fire Rating	120 Minutes
US Testing/Compliant	UL 263, NFPA 251, ASTM E 119
Canadian UL Listing	CAN/ULC-S101
Building Code Marking	W-120
Impact Safety Rating	CPSC 16CFR 1201-CAT II; CAN/CGSB-12.1-M; ANSI Z97.1
Nominal Thickness (in.; mm)	1-9/16" (39 mm)
Thickness Tolerance (in.; mm)	+1/8" to -1/16" (+3 mm to -1.5 mm)
U value (BTU/hr*sqft/°F)	0.65
STC Rating	46
Visible Light Transmission	≈ 82%
Groove (in.; mm)	Depth: 7/8" (22 mm) Width: 2-15/16" (75 mm)
Weight (lbs./ft. <sup>2</sup> ; kg/m <sup>2</sup> )	17.4 (77.5)

MAXIMUM DIMENSIONS	Window, Transom, Sidelight	Door Non-Temp Rise	Door Temp Rise
Maximum Exposed Height (in; m)*	94-5/8 (2.40)	N/A	N/A
Maximum Exposed Width (in; m)*	94-5/8 (2.40)	N/A	N/A
Maximum Exposed Area (in <sup>2</sup> ; m <sup>2</sup> )*	4,435 (2.86)	N/A	N/A

\*Height multiplied by width cannot exceed maximum exposed area.

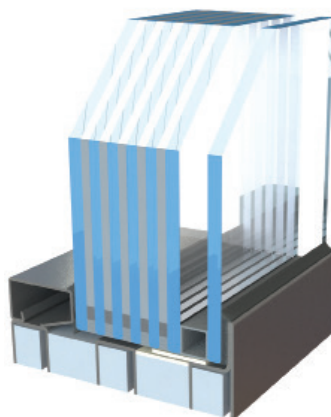
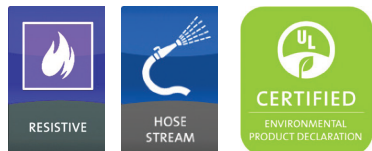
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# CONTRAFLAM® 120 IGU

Fire-Rated Clear Tempered Safety Glass - Exterior Application

## CLASSIFICATION

## PRODUCT FEATURES



## TECHNICAL SPECIFICATIONS

Fire Rating	120 Minutes
US Testing/Compliant	UL 263, NFPA 251, ASTM E 119
Canadian UL Listing	CAN/ULC-S101
Building Code Marking	W-120
Impact Safety Rating	CPSC 16CFR 1201-CAT II; CAN/CGSB-12.1-M; ANSI Z97.1
Nominal Thickness (in.; mm)	2-1/4" (58 mm)
Thickness Tolerance (in.; mm)	+1/8" to -1/16" (+3 mm to -1.5 mm)
U value (BTU/hr*sqft/°F)	0.31
STC Rating	47
Visible Light Transmission	≈ 78%
Groove (in.; mm)	Depth: 13/16" (21 mm) Width: 2-9/16" (65 mm)
Weight (lbs./ft. <sup>2</sup> ; kg/m <sup>2</sup> )	21.4 (92.5)

MAXIMUM DIMENSIONS	Window, Transom, Sidelight	Door Non-Temp Rise	Door Temp Rise
Maximum Exposed Height (in; m)*	94-5/8 (2.40)	N/A	N/A
Maximum Exposed Width (in; m)*	94-5/8 (2.40)	N/A	N/A
Maximum Exposed Area (in <sup>2</sup> ; m <sup>2</sup> )*	4,435 (2.86)	N/A	N/A

\*Height multiplied by width cannot exceed maximum exposed area.

Low iron glass available upon request.

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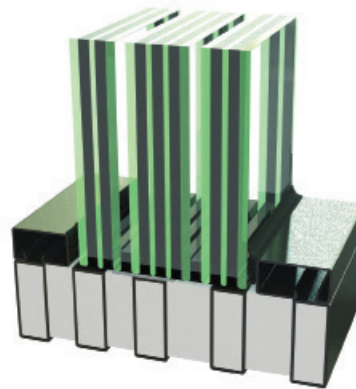


# CONTRAFLAM<sup>®</sup> 180

Fire-Rated Clear Tempered Safety Glass

## CLASSIFICATION

## PRODUCT FEATURES



## TECHNICAL SPECIFICATIONS

Fire Rating	180 Minutes
US Testing/Compliant	UL 263, ASTM E 119
Canadian UL Listing	CAN/ULC-S101
Impact Safety Rating	CPSC 16CFR 1201 (Categories I & II); CAN/CGSB-12.1-M; ANSI Z97.1
Nominal Thickness (in.; mm)	3-7/8" (98 mm)
Thickness Tolerance (in.; mm)	+1/8" to -1/8" (+3 mm to -3 mm)
U value (BTU/hr*sqft/°F)	0.31
STC Rating	49
Visible Light Transmission	≈ 75%
Groove (in.; mm)	Depth: 7/8" (22 mm) Width: 2-15/16" (75 mm)
Weight (lbs./sq. ft.)	34.3 (77.5)

## AUTHORIZED DIMENSIONS

Rating	Application	Max Exposed Area of Glass (Sq in)	Max Width of Exposed Glass	Max Height of Exposed Glass	Min Depth of Groove	Groove Width	Building Code Marking <sup>1</sup>	UL Design Numbers <sup>1</sup>
3 hr.	Windows	2304	48"	48"	13/16"	4-1/8"	W-180	U546, W493

NOTE: Contrafl am 60, 90, 120 products are available with SGG Diamant<sup>®</sup> low iron glass.

<sup>1</sup>See Reference Page

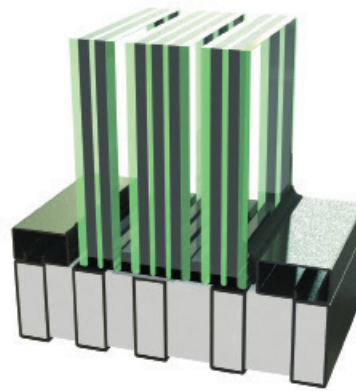
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# CONTRAFLAM® 180 IGU

Fire-Rated Clear Tempered Safety Glass - Exterior Application

## CLASSIFICATION

## PRODUCT FEATURES



## TECHNICAL SPECIFICATIONS

Fire Rating	180 Minutes
US Testing/Compliant	UL 263, ASTM E 119
Canadian UL Listing	CAN/ULC-S101
Impact Safety Rating	PSC 16CFR 1201 (Categories I & II); CAN/CGSB-12.1-M; ANSI Z97.1
Nominal Thickness (in.; mm)	4-3/8" (106 mm)
Thickness Tolerance (in.; mm)	+1/8" to -1/16" (+3 mm to -1.5 mm)
U value (BTU/hr*sqft/°F)	0.31
STC Rating	49
Visible Light Transmission	≈ 75%
Groove (in.; mm)	Depth: 7/8" (22 mm) Width: 3-7/16" (87 mm)
Weight (lbs./sq. ft.)	37.4 (92.5)

## AUTHORIZED DIMENSIONS

Rating	Application	Max Exposed Area of Glass (Sq in)	Max Width of Exposed Glass	Max Height of Exposed Glass	Min Depth of Groove	Groove Width	Building Code Marking <sup>1</sup>	UL Design Numbers <sup>1</sup>
3 hr.	Windows	2304	48"	48"	13/16"	4-7/8"	W-180	U546, W493

<sup>1</sup>See Reference Page

Low iron glass available upon request.

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